PETROLEUM REVIEW

Honorary Editor

PETER ELLIS JONES

Editors

GEOFFREY MAYHEW
TONY SCANLAN

VOLUME FORTY-TWO

1988

THE INSTITUTE OF PETROLEUM
61 NEW CAVENDISH STREET
LONDON W1M 8AR

AUTHOR INDEX

A L-SHANFARI, S. bin A., ME oil producers are not as dependent on the Straits of Hormuz as they were, April; 4–7.

ARCHER, J. S., Petroleum engineering research, January; 29–36.

ARMSTRONG, P. R., Additive injection and dye marking systems, September; 7, 9, 11.

BAND, G., There must be a strong emphasis on skill and training of the offshore workforce, November; 4–7.

BANGS, M., Oil industry nurses debate occupational health hazards, December; 29, 30.

BENNETT, C., Filling station signs dilemma, September; 16–18.

BERRY, J., Oil and the inner cities, February; 26, 27.

BINKS, A., Laymans guide to oil price reporting, March; 48, 49.

BISHOP, J., Oil prices and the 'need to know', October; 27–29.

BRICE, P., Understanding black sludge formation, December; 36–39.

BRIDGES, J., As health and safety standards rise the need for independent judgement grows, August; 21–23.

BROOM, D., Thinking small about retail markets, February; 22, 23.

BUCKMAN, D., South Africa aspires to become offshore producer, July; 24, 25.

BURNETT, C., Best economic choice, January; 14–15.

CALLOW, C., Pressure on the middle ground, February; 25.

CARR, C. M., Amoco means to become a bigger player in the North Sea, June; 6–8.

CHACIN, J., Our reserves are large — the Atlantic Basin is our natural market, March; 10–12.

COTTON, W. J., Adding lightness offshore, May; 44.

COUTTS, A., Biocide oil/water partition coefficients — an important consideration when choosing an effective antimicrobial treatment for stored fuel, October; 31, 32.

DEAN, R. W., Advantages of mass measurement for petroleum liquids, November; 32, 33.

DE BACKER, C. M., Relevance of central hydraulics to petroleum installations, June; 30–32.

DRAY, S., UK bulk storage industry goes ahead in automated distribution, August; 6–8.

FOSSLI, K., Norway reaches an offshore crossroads, December; 15–17.

FOULSHAM, P., UK onshore — the emergence of the next generation of oil companies, October; 16, 17.

FURNESS, R. A., Mass flow measurement — a technological growth area, November; 35–38.

GEE, H., Fossil feathers lay 'forgery' to rest, October; 45.

GLENDAY, I. R., Information technology for competitive edge in marketing and distribution, February; 8–9.

GLOVER, I., Midnight express — the natural development, March; 46.

GORDON, A., From 1995 the trend in non-OPEC production is firmly downwards, June; 20, 21.

GREAVES, W., Aviation market developments, November; 18, 19.

GREAVES, W., Shocking futures?, July; 41.

HALLIWELL, C., Abandonment — the accountant's dilemma, June; 27–29.

HANKS, D. C., Corrosion in fuel storage tanks, February; 38, 39.

HARRISON, D., Petroleum pipeline related research reviewed, April; 29–36 (5 pages).

HAWDON, D., Oil transport costs in the 1990s, August; 42–45.

HAWKINS, R. J., Bright future for the UKCS, December; 11–14.

HAWKINS, R. J., How Australia's NW Shelf was forced to give up its treasure, January; 19–22.

HAWKINS, R. J., Tax boost for unleaded sales, April; 9, 10.

HAYCOCK, R. F., Understanding black sludge formation, December; 36–39.

HAYGARTH, N., Disabled driver is now an important part of the retail market, August; 24, 25.

HAYWARD, A. T. J., Recent developments in metering of oil and natural gas, January; 37–39.

HEDLEY, C., Property management — some fundamentals, March; 44, 45.

HERRINGTON, J. S., Strategic resource in a free market, December; 18, 19.

HEWSTONE, R. K., Handling, re-use and disposal of used lubricating oils, March; 61–65.

HIRST, C., Shell's 60 flying years, June; 24, 25.

HIRST, C., Tallow Chandlers Company brightens old links, September; 30, 31.

HOBAN, T., Bitumens ancient and modern, August; 26, 27.

HOBSON, G. D., IP and RSM — Some links and parallels, August, 55–56.

HOLIDAY, G., Leak testing footvalves fitted to bottom loading road tankers, September; 15.

HOLLY, S., Post-war prospects for Gulf shipping, December; 7–10.

HOLMES, P., Oil is a sunshine industry, September; 23, 24.

JENKINS, G., Aviation market developments, November; 18, 19.

JENKINS, G., Developments in the oil refining and petrochemical industries, July; 36–39.

JONES, P., Presence of trace elements in crude oils and allied substances, June; 39–42.

JONES, R. E., Hatfield Moors — case history of a small onshore gas field, May; 33, 35–37.

JUNGELS, P., Art of compromise in joint ventures, September; 20–22.

KELLAWAY, R., UK bulk storage industry goes ahead in automated distribution, August; 6–8.

KEMP, J., Conoco takes an optimistic view on the future of Southern Basin gas, October; 4, 6.

KENDALL, D., There will be an even stronger emphasis on marketing, January; 4–6.

KORCHEMKIN, M. B., Soviet gas exports and new factors in the Soviet energy scene, November; 20–22.

KOWALSKI, G., Oil demand increase of up to 14mbd by 2,000 if the price is constant, May; 19, 20, 22.

LEWIS-BADGETT, K., In becoming a UK petrol brand, Heron is spending £100m on 150 new stations, May; 9, 10, 12.

LILLEY, I. J., Development of a subsea lubricator system, June; 34, 35.

Lord SANDERSON of BOWDEN., Be ready for the up-turn, January; 13–15.

McCANN, K., OPEC and the future of oil, August; 16–20.

McDONALD, P., OPEC fails to come to terms with Gulf War, February; 11–12.

McDONALD, P., Singapore broadens its economic base, September; 27, 28.

McDONALD, P., Two Yemens — a new problem for OPEC?, May; 28, 29.

MALCOLM, C. N., Storage industry view of the modern oil refinery, February; 13, 15.

MATHERS, D., Petroleum terminal automation — the US experience, August; 13–15.

MAYHEW, G., Amoco means to become a bigger player in the North Sea, June; 6–8.

MAYHEW, G., Art of compromise in joint ventures, September; 20–22.

MAYHEW, G., BP holds an 'Are you being served?' experiment, December; 4, 5.

MAYHEW, G., Computing in the upstream comes of age, February; 4–7.

MAYHEW, G., Conoco takes an optimistic view on the future of Southern Basin gas, October; 4, 6.

MAYHEW, G., Facing up to change, July; 9, 10.

MAYHEW, G., In becoming a UK petrol brand, Heron is spending £100m on 150 new stations, May; 9, 10, 12.

MAYHEW, G., Manager sets off to the gas field with the whole kit, April; 11.

MAYHEW, G., ME oil producers are not as dependent on the Straits of Hormuz as they were, April; 4–7.
MAYHEW, G., Pressures on the oil industry for 1992, November; 12–14.
MAYHEW, G., There will be an even stronger emphasis on marketing, January; 4–6.
MAYHEW, G., Unleaded petrol — the refineries act in advance of the market, September; 4.
MAYHEW, G., Wytch Farm pipeline team commended, October; 10–14.
MILES, J., Computer aided loss investigation and monitoring, January; 47–49.
MIRZOEFF, J., How to store all those records, December; 21.
MIRZOEFF, J., Oil price information — can trends be derived from data?, April; 44.
MOLENAAR, H., Rotterdam and future developments in oil, August; 9–12.
NAKAJIMA, M., LNG and Japan's electricity supply industry, May; 38–41.
NETSCHERT, B. C., Commitment and balance in economics and the environment, January; 23–25.
NICHOLLS, J., Proven reserves — dwindling human resources, September; 32.
NOBLE, P., Contracting out in distribution, June; 17, 18.
NOBLE, P., Definitive code on safe operation of filling stations, April; 21, 22.
NOBLE, P., Emphasis is on the positive on the retail forecourt in 1988, March; 38, 39.
NOBLE, P., Petrol retailer's own shop window, May; 15.
NOBLE, P., UK's apathetic attitude to unleaded petrol, September; 6.
O'CALLAGHAN, M., Petroleum prospects of offshore Ireland, July; 33–35.
OGDEN-SWIFT, A., Is your plant economical with the truth?, May; 46, 47.
O'KEEFFE, T. W. W., Three decades of fuelling aircraft — a personal view, October; 18–23.
OLIVER, J., MBA — a vision for the future, December; 40.
O'NEIL, R., Today's UK customer is firmly in the driving seat, May; 6–8.
O'SULLIVAN, M. P., Dorset oil — the Wytch Farm story, May; 30, 32.
PARIENTE-DAVID, S., Italy's new energy plan — no nuclear, but more gas and coal, September; 25, 26.
PARKINSON, C., UK oil industry has adapted to the oil price fall — investment is rising, March; 4, 5.
PATON, R., Calibration techniques for mass flowmeters, November; 40–42.
PAYNE, D., CEC is twenty five years old, December; 43, 44.
PAYNE, D., WPC organizers go offshore Brazil, February; 32.
PEDLEY, J., Fuel stability and handling, December; 25–28.
PETERS, J., Needs of the customer guides Esso through 100 years, June; 10–15.
PITMAN, B. E., Management of the Shell/Esso integrated production system, August; 51–53.
POOLE, M., Glass's guide to unleaded in cars, May; 13.
PRIOR, D. I., Northern Associated gas system operated by Shell/Esso, September; 39–42.
RADFORD, T. S., What makes an offshore project marginal, February; 34–36.
RAVDEN, M., Graphics software helps BP to protect the environment, May; 47.
REYES, A. G., Premier producers of light as well as of heavy oil, April; 13, 14.
ROBSON, R., Understanding black sludge formation, December; 36–39.
RUSSELL, T. J., Petrol and diesel additives, October; 35–38, 40–42.
SAMII, M. V., Regulate to avert a fourth price disaster, March; 13, 14.
SANDERSON of BOWDEN, Lord., Be ready for the up-turn, January; 13–15.
SAUNDERS, M., North Sea taxation for the 1990s, February; 28.
SCANLON, T., New forum for Middle East analysis, February; 30, 31.
SCANLAN, T., Venezuela — time to take a new look, June; 26.
SHAW, R., Outlook for British independent oil companies is encouraging, March; 53, 54.
SIMONSON, J. R., Development of an additive to treat water contaminated diesel fuel oils, December; 31–34.
SMITH, P., Managing automation programmes, March; 43.
SPIESS, G. T., Handling re-use and disposal of used lubricating oils, March; 61–65.
STANISLAW, D., Supply/demand balance — driving reintegration; thriving new rivalries after OPEC, April; 17–19.
SULTAN, N. H., Q8 in the UK — a friend and a competitor, March; 7–9.
SYMONDS, E., Future shocks ahead, May; 23, 25.
THORLEY, A. R. D., Development of an additive to treat water contaminated diesel fuel oils, December; 31–34.
TIMONEY, S. G., Engine design, exhaust and the environment, July; 43–46.
VAN WINGAARDEN, J., Rotterdam focusses on oil tomorrow, February; 19.
VERMOLEN, T. J. F., Approach to the market, April; 14, 15.
WATERFIELD, T., Product lubricated injection pump, April; 39.
WEALE, G., Proposed EEC excise tax harmonization — implications for UK energy demand, November; 16, 17.
WELLS, M., Onshore fields — crude storage and movement, February; 16.
WESTWOOD, J. D., Latin America — a major market for suppliers, April; 15, 16.
WILKINS, B. C., Relevance of central hydraulics to petroleum installations, June; 30–32.
WILLIAMS, T., New IP codes are being written, January; 15.
WU, H.-Y., Studies on the lubricity of hydrocarbons and effect of additives on lubricity, February; 47–49.
YERGIN, D., Energy security in the 1990s, November; 26–31.
YERGIN, D., Supply/demand balance — driving reintegration; driving new rivalries after OPEC, April; 17–19.
ZHIZHONG, L., Studies on the lubricity of hydrocarbons and effect of additives on lubricity, February; 47–49.

SUBJECT INDEX

Amoco:
Increase in North Sea operations, June, 6–8.
Analysis:
Remote sensing of oil slicks, July, 29–32.
Trace elements in crude oils, June, 39–42.
Australia:
LPG plant, December, 6.
Books Reviewed:
Arabs and the oil crisis, February, 42.
British and Norwegian offshore industrial relations, May, 42.
Bibliography on engine lubricating oil, February, 42.
Contributions in petroleum geology and engineering — Part 3. Underground storage of natural gas, February, 42.
Contributions in petroleum geology and engineering. Vol. 4. Gas production and engineering, May, 42.
Development of the UK's oil and gas resources 1988, June, 36.
Developments in petroleum engineering, Vol. 1. Stability of tubulous and deviation control, May, 42.
Downhole tools and services, August, 49.
Energy security to 2000, August, 49.
Hydrocracking — past, present and future, April, 41.
Lloyds offshore register, February, 42.
Manpower requirements of North Sea operators to the year 2000, June, 36.
Middle East — regional geology and petroleum resources, May, 42.
1986 oil price crisis — economic effects and policy responses, May, 42.
NDT of large diameter pipe for oil and gas transmission lines, February, 42.
North-West Continental Shelf, January, 19–22.
Oil — a practical guide to the economics of world petroleum, April, 41.
Oil energy trends annual statistical review, August, 49.
Petrochemicals — the rise of an industry, August, 49.
Petroleum hydrocarbons, April, 41.
Petroleum exploitation strategy, May, 42.
Petroleum operations in Nigeria, May, 42.
Quality assurance in the offshore oil and gas industry, August, 49.
Reducing industrial costs, April, 41.
Safety in the offshore petroleum industry — the law and practice for management, February, 42; June, 36.
Subsea separation and transport, August, 49.
Surface operations in petroleum production, May, 42.
Who's who in world oil and gas, April, 41.
World offshore oil and gas industry, February, 42.
World oil trends 1987–88, February, 42.
BP:
Cleeton platform, April, 11.
Environmental award for BP, February, 45.
First lateral well in North Sea, October, 8.
Magnus stake sale, November, 9.
Offshore Dorset — major find, January, 40.
Retail marketing experiment, December, 4–5.
Sponsorship, February, 27.
Training, March, 56, 57.
Wytch Farm story, May, 30, 32.
Brazil:
Gas pipeline on stream, December, 6.
Latin America to increase production, April, 12–16.
Petrobras developments, January, 40.
World petroleum congress, 1991, February, 32.
Companies:
Bartington Instrument Ltd funded by Government, February, 45.
Chevron — sponsorship, May, 37.
Enterprise, April, 42.
Hartwell Oils Ltd, July, 26, 27.
Incinatrol Inc, January, 41.
Metocean Consultancy Ltd, August, 46.
Outlook for British Independent oil companies, March, 53, 54.
UK onshore — companies involved, October, 16, 17.
Computer Systems:
Computing in the upstream, February, 4–7.
Graphics software for environmental protection, May, 47.
Marketing and distribution, February, 8, 9.
Conferences, Meetings and Exhibitions:
Asia-Pacific Petroleum Conference, June, 38.
ASME Turbo Expo — Land, Sea and Air, May, 48.
Aviation turbine fuel specifications, April, 46.
CADCAM '88, March, 60.
Chemicals in the oil industry, March, 60.
Cost/Planning/Economics of the North Sea, April, 46.
Developments in valves and actuators for fluid control, January, 45.
Electrical safety in hazardous areas, October, 24.
European Undersea Biomedical Society, April, 46.
Europec '88, September, 37.
Flucome '88, August, 50.
Formation damage control, January, 45.
Gas futures trading, October, 24.
Health hazards of cutting oils and their control, April, 46.
Materials testing '88, March, 60.
North Sea in the 1990s, February, 46.
Oceanology international, February, 46.
Offshore Computer, January, 45.
Offshore engineering — cost reduction, January, 45.
Offshore Mechanics Arctic Engineering, January, 45.
Offshore multiphase production technology, August, 50.
Offshore Northern Seas, April, 46.
Offshore oil and gas pipeline technology, January, 45.
Offshore South-East Asia, January, 45.
Offshore Technology Conference, March, 60.
Offshore update '88, January, 45.
Petrotech '88, January, 44.
Prevention, behaviour, control, and clean up of oil spills, April, 46.
Shallow gas and leaky reservoirs, May, 48.
Subsea control and data acquisition, January, 45.
Undersea Defence Technology, June, 38.
UK corrosion '88, August, 50.
Wescon '88 — global prospects offshore, September, 37.
Wire rope in offshore applications, January, 45.
World Gas, January, 45.
World Gas, May, 48.
World Petroleum Congress, February, 32.
Conoco:
Drilling of 200th well, May, 4.
Major drilling improvement, April, 10.
Southern Basin gas, October, 4–7.
Sponsorship, April, 27.
Contract News:
Davy Offshore Modules Ltd, June, 5.
Dowty Boulton Paul Ltd, June, 5.
FMA Group, January, 41.
Keystone Valve (UK), June, 35.
Hunting Oilfield Services Ltd, June, 5.
Kent Process Control Ltd, June, 5.
Press Offshore, April, 43.
W. Lamb Ltd, April, 42.
Vetco Gray Ltd, June, 5.
Corrosion:
Fuel storage tanks, February, 38, 39.
Pipelines, April, 29–36.
Distribution:
Automated distribution, August, 6–9.
Computer applications, February, 8, 9.
Contracting out, June, 17, 18.
Hargreaves Petroleum — first independent to supply unleaded, July, 4.
Marketing, January, 4–6; 16, 17.
Review, September, 14.
Drilling:
Lateral well completion, October, 8.
Major offshore drilling improvement, April, 10.
Economics:
Accountant's dilemma — pipeline and platform abandonment, June, 27–29.
Annual survey of lead and sulphur figures for petroleum products delivered into the UK market — 1987, April, 47.
Aviation market developments, November, 18, 19.
Computerized ordering and scheduling, September, 15.
Corporate activity — the Independents, February, 25.
Crude oil price — need for regulation,

March, 13–14.
Deliveries into consumption, January, 52; February, 52; March, 68; April, 48; May, 52; June, 48; July, 52; August, 56; September, 46; October, 47; November, 47; December, 48.
Energy security, November, 27–31.
Environmental aspects — balance with economic realities, January, 23–25.
Equipment, September, 15.
EEC excise tax harmonization — UK implications, November, 16, 17.
Independents — outlook for, March, 53, 54.
Net acquisition cost of oil — prices, October, 27–29.
North Sea taxation, February, 28.
Oil price information, April, 44.
Oil price reporting — layman's guide, March, 48, 49.
Oil prices in the 1990s, May, 19–22.
OPEC and the future of oil, August, 16–20.
Reintegration policy, April, 17–19.
Stability in the oil market, December, 18, 19.
Tax boost for unleaded sales, April, 9; September, 4.
Terminal automation, September, 15.
Transportation costs in the 1990s, August, 42–45.

Environment:
Ecological impacts of the oil industry, January, 52.
Environmental studies by Shell, June, 4.
Graphics software — environmental protection, May, 47.
Hazardous waste control company formed, January, 41.
Kent book prize, January, 41.
Protection in the light of economic realities, January, 23–25.

Esso:
Customer guides, June, 10–15.
EDIPS phase 4, January, 40.
Investment in computer technology, February, 8, 9.
Northern Associated gas system, September, 39–42.
Profits for 1987, May, 4.
Seatrade record, May, 26, 27.
Shell/Esso integrated production system — management, August, 51–53.
Sponsorship, April, 27.
Sponsorship, February, 26.

Exploration:
Airborne hydrocarbon detection system, November, 44.
Gas condensate, January, 7–12.
Offshore Dorset, January, 40.
Offshore Ireland, July, 33–35.

Films:
Microbiological problems in fuels, June, 46.

Finance:
Effects in 1992 of the Single Act, November, 12–14.
Futures — shocks ahead?, May 23, 25; July, 41.
Joint ventures — spreading the risk, September, 20–22.
Marginal offshore projects, February, 34–36.
North Sea investment, March, 4–6.
Project financing, February, 34–36.
Taxation for the 1990s, February, 28.

General Technology:
Colour code for product identification, November, 43, 44.
Engine design, exhaust, and the environment, July, 43–46.
Fluid loss reducing agent, February, 39.
Liquid bottom sampler for tanks, April, 38.
Lubricity of hydrocarbons, February, 47–49.
Multi-Pulse injector for biocides, February, 39.

Indonesia:
Britoil 100% interest award, February, 45.

Institute of Petroleum:
Additions to library, February, 51.
Anniversary Lunch — the 75th, December, 45–47.
Annual Dinner 1988, March, 4–6; 67.
Annual General Meeting, July, 47–51.
Archaeopteryx — forgery claims, October, 45.
Awards of Council, August, 54; November, 47.
European position of IP and its codes in 1992, June, 43–45.
IP and Royal School of Mines — links and parallels, August, 55–56.
IP Week, March, 4–14.
Luncheon Meeting, March, 7–9.
New Collective Members, May, 51; June, 47; July, 52; September, 46.
New Fellows, January, 50; March, 67; May, 51; August, 54; October, 46, 47; November, 47.
New Members, January, 50, 51; February, 50; March, 67, 68; April, 48; May, 51; June, 47; July, 52; August, 54; September, 46; October, 47; November, 47; December, 48.
New President, July, 9, 10.
Obituary — Michael R. Alderson, August, 54.
Obituary — Peter Blakey, May, 51.
Obituary — Alex Byers, August, 54.
Obituary — Richard Hunting, April, 47.
Obituary — Don McFann, March, 67.
Obituary — Blyth McNaughton, April, 47.
Obituary — Frank Matthews, May, 51.
Obituary — John G. Mills, July, 52.
Obituary — Henry Newlyn, May, 50.
Obituary — Norman Robinson, January, 50.
Obituary — Jimmy Simpson, April, 47.
Obituary — K. D. White, November, 46.
Paul Rumsey Prize 1988, April, 44.
Presidential Address, July, 49–51.
Queen's Honours List, August, 54.
Sir Archibald Foster — new IP President, July, 9, 10.
Unleaded fuel — Peter Jones BBC interview, June, 46, 47.
Tony Fox Memorial Award, March, 57.

Institute of Petroleum Branches:
Director General addresses Yorkshire Branch, May, 49.
Elaine Gillat — NW Career Woman of the Year, June, 46.
Offshore drilling contractor and mobile drilling operations, February, 52.

Institute of Petroleum Branch Meetings:
Aberdeen, January, 50; February, 50; March, 67; May, 51; September, 44; October, 46; November, 47; December, 48.
Edinburgh and South-East Scotland, January, 50, 51; February, 50; March, 67; September, 44; October, 46; November, 47; December, 48.
Essex, January, 50; February, 50; March, 67; September, 44; October, 46; November, 47.
Humber, January, 50; February, 50; March, 67; April, 48; September, 44; October, 46; November, 47.
Irish, January, 50; February, 50; September, 45; October, 46; November, 47.
London, February, 50; March, 67; April, 48; May, 51; September, 45; October, 46; November, 47; December, 48.
Midlands, January, 50; February, 50; March, 67; June, 47; September, 45; October, 46; November, 47; December, 48.
Northern, January, 50; February, 50; March, 67; April, 48; September, 45; October, 46; November, 47.
Shetland, January, 50; February, 50; September, 45; October, 46; November, 47.
Southern, January, 50; February, 50; March, 67; September, 45; October, 46; November, 47; December, 48.
South Wales, January, 50; February, 50; March, 67; April, 47; June, 47; September, 45; October, 46; November, 47.
Stanlow, January, 50; February, 50; March, 67; April, 47; September, 45; October, 46; November, 47; December, 48.
West of Scotland, February, 50; March, 67; September, 46; October, 46; December, 48.
Yorkshire, January, 50; February, 50; March, 67; September, 46; October, 46; November, 47; December, 48.

Institute of Petroleum Publications:
Safe Loading Pass Scheme, April, 23–25.

Instruments:
Helicopter guidance aid for North Sea installations, October, 32.
Hydrogen service, June, 35.
Metering developments, January, 37–39.
Oil testing equipment, February, 45.
Radar level gauge, April, 40.
Thermal characteristics measurement, June, 35.

Ireland:
Petroleum prospects offshore, July, 33–35.

Italy:
New energy plan, September, 25, 26.

Kuwait:
Formula 3000 sponsorship, July, 4.
Q8 in the UK, March, 7–9.
Stake in BP decision, November, 10.
Truck racing sponsorship, May, 4.

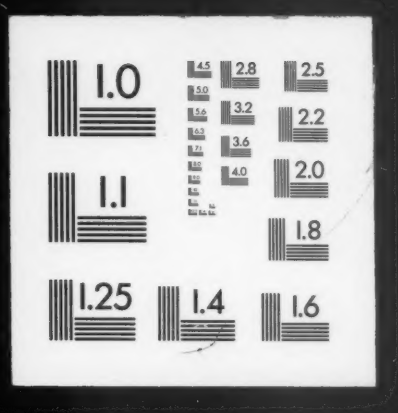
Letters:
Re. — Gold's hypothesis, January, 28; February, 37.
Re. — Setting oil sponsorship to music, May, 37.
Is Amoco's Hastings defeat an exploration test, March, 35.
Museum appeal, July, 41.
Observations on price elasticities, July, 41.
Trafalgar House, January, 28.

LPG & LNG:
Handling LPG bulk storage, February, 21.
LNG and Japan's electricity supply industry, May, 38–41.

Lubricants:
Australian plant, December, 6.
CEC is 25, December, 43, 44.
Handling, re-use and disposal of used lubricating oil, March, 61–65.
Lubricity of hydrocarbons and effect of additives on lubricity, February, 47–49.
Shell lubricants centre, July, 6–8.
Maintenance:
Increase in North Sea rig maintenance, April, 43.
Measurement:
Calibration techniques for mass flowmeters, November, 40–42.
Computer-aided loss control, January, 47–49.
Digital density meter, April, 40.
Mass flow measurement, November, 35–38.
Mass measurement of petroleum liquids, November, 32, 33.
Mass measurement survey, November, 32–42.
Monitoring techniques, January, 47–49.
Oil and natural gas metering developments, January, 37–39.
Middle East:
Oman, April, 4–7.
Postwar prospects for Gulf shipping, December, 7–10.
Straits of Hormuz, April, 4–7.
Strategy to the year 2000, February, 30, 31.
Mobil:
Formula one racing sponsorship, January, 26, 27.
Lloyds and Mobil joint marine research, March, 59.
Playwriting competition, June, 4.
Sponsorship, April, 27.
UK market, May, 6–8.
Natural Gas:
Metering developments, January, 37–39.
North Brae, June, 5.
Northern Associated gas system, August, 51–53; September, 39–42.
Southern Basin gas — Conoco's view, October, 4.
Soviet gas exports, November, 20–22.
Thatcher inauguration of 'V' gas fields, October, 5–7.
UK gas condensate exploitation, January, 7–12; June, 5.
North Sea:
Increase in activity, May, 4.
Lateral well drilling, October, 9.
Oil and gas beyond 2000, December, 11–14.
UK North Sea tax system, February, 28.
North Sea Fields:
Alwyn North inauguration, June, 4.
Audrey, November, 10.
Barque, August, 5.
Camelot, July, 4.
Cleeton, November, 10.
Clipper, August, 5.
Magnus — sale of license, November, 9.
Miller, November, 10.
Ninian gas leak, November, 9.
North Brae, June, 5.
North Valiant, October, 5–7.
South Valiant, October, 5–7.
Vanguard, October, 5–7.
Villages fields equipment, April, 11.
Vulcan, October, 5–7.
North Sea UK Waters:
Abandonment opportunities, January, 41.
Activity — rising trend, February, 44.
Equipment for Villages fields, April, 11.
Future oil and gas production, January, 13–15.
Gas condensate exploitation, January, 7–12.
Taxation for the 1990s, February, 28.
Norway:
Future petroleum strategy, December, 15–17.
Occidental:
Joint venture with USSR, January, 41.
Piper Alpha catastrophe, August, 4; November, 9.
Piper Alpha technical interim report, November, 9.
Offshore Technology:
Central hydraulics, June, 30–32.
Documentation control, December, 21.
Fatigue cracks library, December, 6.
Infra-red detector for smoke and oil mist, February, 41.
Major drilling improvement, April, 10.
Metocean Consultancy Ltd, August, 46.
Remote sensing of oil slicks, July, 29–32.
Seabed scan control system, May, 45.
Stationary pressure chamber, April, 40.
Teesside offshore base, May, 16, 18.
Weight reduction of structures, May, 44.
Onshore UK:
Companies involved, October, 16, 17.
Conoco drills 200th well, May, 4.
Crude storage and movement, February, 16.
Hatfield Moors, May, 33–37.
License awards, April, 43.
West Firsby, Lincolnshire, March, 58.
Wytch Farm story, May, 30, 32.
OPEC:
Dependence on OPEC increased, May, 5.
Gulf War ramifications, February, 11, 12.
Revenue considerations, August, 16–20.
Yemen — new problem for OPEC, May, 28, 29.
Personnel:
Personnel movements, January, 46; February, 43; March, 50; April, 45; May, 43; June, 37; August, 48; September, 35; November, 46; December, 42.
Petrochemicals:
Major developments in the industry, July, 36–39.
Modified bitumens, August, 27.
Petrofina:
Sponsorship, April, 26.
Pipes and Pipelines:
Abandonment, June, 27–29.
Corrosion, April, 29–36.
Erosion, April, 29–36.
Multiphase production systems, April, 29–36.
Valve testing and evaluation, April, 29–36.
Wytch Farm pipeline, October, 10–14.
Platforms and Rigs:
Abandonment, June, 27–29.
Central hydraulics, June, 30–32.
Helicopter guidance aid for North Sea installations, October, 32.
Maintenance, April, 43.
Piper Alpha accident, August, 4; November, 9.
Weight reduction, May, 44.
Pollution:
Oil spillage — cork granules for beach, October, 32.
Remote sensing of oil slicks, July, 29–32.
Production:
Brent oil line system, August, 50–53.
Computing in the upstream, February, 4–7.
Flags gas system, August, 51–53.
Fuel stability and handling, December, 25–28.
Fulmar oil and gas system, August, 51–53.
Non-OPEC oil production — trends, June, 20, 21.
Performance data, May, 46.
Shell/Esso integrated production system, August, 50–53.
Strategies for the 1990s, September, 23–24.
Pumps:
Injection pump — product lubricated, April, 39.
Refineries:
Additive for water-contaminated diesel fuel oils, December, 31–34.
Additive injection and dye marking systems, September, 7–11.
Additives, October, 35–42; December, 25–28; 31–34.
Coryton refinery — data collection system, May, 45.
Bitumens — ancient and modern, August, 26–27.
Fuel stability and handling, December, 25–28.
Major developments in the industry, July, 36–39.
Performance data, May, 46.
Singapore's position, September, 27, 28.
Stanlow investment, May, 5.
Unleaded petrol, September, 4.
Retailing:
Annual survey, March, 16–35.
Brand managers assess the market, March, 27–35.
BP's marketing experiment, December, 4–5.
Computer applications, February, 8, 9.
Consumer Protection Act, 1987, March, 40–42.
Diesel products, July, 11–23.
Disabled driver market, August, 24–25.
Edacom — point-of-sale terminals, March, 46.
EFTPOS system, March, 46.
Forecourt automation, March, 43, 46.
Forecourt marketing and equipment, May, 15; July, 11–23.
Forecourts — future concepts, August, 28.
Forecourt service, December, 4–5.
Forecourt signs, September, 16–18.
Glass's guide to unleaded in cars, May, 13.
Heron — 150 new stations, May, 9, 10, 12.
Market analysis, February, 22, 23.
Marketing, January, 4–6; 16, 17; February, 8, 9; July, 11–23.
Midnight Express Service, March, 46.
Petrol station in year 2000, March, 37.
Property management, March, 44, 45.
Quality of service, March, 38, 39.
Q8 in the UK, March, 7–9.
Safe operation of filling stations — Code, April, 21, 22.
Spanish market, February, 45.
Suppliers to the retail market, March,

20–26; July, 4.
UK's apathetic attitude to unleaded, September, 6.
Unleaded — guide to car suitability, May, 13.
Unleaded — need for information, March, 58.
Unleaded petrol in Europe — progress at mid-1988, December, 23.
Unleaded sales tax boost, April, 9; August, 4.
Safety:
Breathing apparatus — self rescue equipment, November, 44.
Corroded pump plug, January, 43.
Explosion on MV Pointsman at Milford Haven, January, 42.
Faulty ladder, January, 43.
Filling station explosion, April, 21, 22.
Gas leak incident, January, 43.
Guidelines for occupational health services in the oil industry, January, 42.
HSC and HSE annual report, January, 42.
Independent judgement requirements, August, 21–23.
Infra-red detection of smoke and oil mist, February, 41.
Jet fuel stability, December, 25–28.
Ninian gas leak, November, 9.
Occupational health hazards, December, 29, 30.
Offshore workforce training, November, 4–7.
Rail car implosion during discharge, January, 43.
Storage tank explosion, January, 41.
Saudi Arabia:
Sheikh Yamani — suggests dialogue on price, April, 42.
Shell:
Aircraft fuelling, October, 18–23.
Environment studies, June, 4.
Esso/Shell integrated production system — management, August, 51–53.
Induction training, September, 33.
Lubricants centre, July, 6–8.
Northern Associated gas system, September, 39–42.
60 flying years, June, 24, 25.
Sponsorship, April, 26, 27.
Stanlow investment, May, 5.
Three decades of aircraft fuelling, October, 18–23.
South Africa:
Offshore outlook, July, 24, 25.
Standards:
Aspiring to become offshore producers, July, 24, 25.
International product testing, October, 9.
Safe Loading Pass Scheme, April, 23–25.
Storage:
Antimicrobial treatment for stored fuel, October, 31, 32.
Automated distribution, August, 6–8.
Current considerations, February, 13, 15.
Field gathering stations onshore, February, 16.
Independent storage survey, August, 29–41.
Liquid bottom samples, April, 38.
LPG bulk storage, February, 21.
Radar level gauge, April, 40.
Tank corrosion, February, 38, 39.
Tankers:
Costs in the 1990s, August, 42–45.
Tank vehicles:
Leak testing footvalves, September, 15.
Safe Loading Pass Scheme, April, 23–25; September, 15.
Terminals:
Automation — US experience, August, 13–15.
Computer-aided loss control, January, 47–49.
Hamble, December, 6.
Rotterdam market, February, 19.
Rotterdam — review, August, 9–12.
Tankage terminal in South Turkey, August, 5.
Texaco and Petrofina joint venture — Avonmouth terminal, May, 4.
Texaco:
Sponsorship, April, 27.
Training:
BP's policy, March, 56, 57.
Dwindling recruitment reserves, September, 32.
Fire fighting, January, 42.
Imperial College — petroleum engineering research, January, 28–36.
Induction training in Shell, September, 33.
In handling of LPG bulk storage, February, 21.
JAPEC's role in exploration training, 32.
MBA — vision for the future, December, 40.
Management development, June, 22; December, 41.
Offshore workforce, November, 4–7.
School governors from business, June, 23.
Transportation:
Costs in the 1990s, August, 42–45.
Gulf shipping postwar, December, 7–10.
Inline injection — methods and control, September, 7–11.
Underwater technology:
Subsea lubricator system, June, 34, 35.
United States:
Gas find in California, November, 10.
USSR:
Joint venture with Occidental, January, 41.
Soviet gas exports, November, 20–22.
Venezuela:
Atlantic Basin market, March, 10–12.
Latin America to increase production, April, 12–16.
Oil revenues and strategy, June, 26.

Printed by Eyre & Spottiswoode Limited, London and Margate


1.0
1.1
1.25
1.4
1.6
2.8
3.2
3.6
4.0
2.5
2.2
2.0
1.8